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THE EMERGENCE OF NOUN AND VERB CATEGORIES IN THE ACQUISITION OF FRENCH*

This paper considers whether the child's early vocabulary shows signs of being organized into word categories. Two main kinds of evidence are looked for: i. differential production of *fillers* (referred to here more neutrally as Prefixed Additional Elements); ii. relevant phonomorphological variation for verb-words, and only in them. Results of analyses of natural speech production provided by the longitudinal studies of two French acquiring children followed between the ages of 1;3 and 2;3, show that there is a first period in which words seem to constitute one, formally undifferentiated, set. Differentiation between noun-words and verb-words appears progressively, as evidenced by the differential occurrence of PAEs in prenominal and in preverbal positions, and in the appearance of phonomorphologically relevant variations only in words that are verbs in the language. Looking at connected aspects of language, other phenomena are observed to occur at the same time, in particular, a significant increase in the production of multiword speech, that becomes the dominant way of expression.

Introduction

The distinction between nouns and verbs is present formally in many languages and, where it exists, is deeply embedded in the language system. It determines the way words are allowed to follow each other, the contexts in which a word is allowed to appear, the transformations that words can or should undergo and also the inferences that one can make on the meaning of words encountered for the first time (e.g., Surugue, 1984).

The question I will address in this paper is when do children start to produce nouns and verbs. On a first level one could say that children produce nouns and verbs when they use words that, like *ball* and *fall*, are nouns and verbs in the language. Studies that have taken the grammatical categories of the adult language as a criterion, have pointed out that children's lexical repertoire contains more nouns than verbs and that there might be an initial „bias" towards the acquisition of nouns (e.g., Gentner,

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1982; Bates, Bretherton & Snyder, 1988; Bassano, 1998), for semantic (nouns have more identifiable and more concrete referents), formal (are less diverse morphologically, present greater regularities in their context of appearance, e.g., Maratsos & Deak, 1995) or for structural reasons (predicates presuppose arguments, e.g., Macnamara, 1986). These variables might account for the fact that children more easily learn certain words than others, words that in languages like English, French, Italian and German, where the bias is found, function as nouns[1].

But does it make any sense to call the words these young children produce „nouns" and „verbs"? If these words are nouns and verbs in the language children are acquiring, are they also nouns and verbs in their emerging language systems? Or do they start out as semantic units, undifferentiated from the point of view of their grammatical category?

This paper contributes analytical tools to clarify this issue, looking for indices pointing to the presence of a noun/verb categorization *within* the child's emerging language system. This is an important issue that needs to be clarified before we can even start making hypotheses about how children learn nouns and verbs from the language they hear, or about how they use the information contained in such identification for retrieving the meaning of words, and vice versa.

Some considerations about nouns and verbs in French

Lazard (1984) states clearly that nouns and verbs in French are „purely linguistic objects whose reality exists only within the language" and are defined „by their place and their properties in the structure of the language, namely, in morphology and syntax"[2] (*op.cit.*, p.29). The semantic distinctions that correspond in general to nouns and verbs may provide the cognitive and functional support to the formal distinctions between them. Diachronically, semantic and formal distinctions may have risen at the same time. However, if semantic distinctions didn't correspond to formal differences, we would be simply confronted by words differing in meaning, without the possibility, nor the need, to identify categories of words (e.g., Clairis, 1984). Lexical acquisition would then be reduced to acquiring the meaning of individual words without any bootstrapping coming from the category to which the word belongs.

Thus, when considered from the point of view of the knowledge children have of grammatical categories like nouns and verbs, the question asked at the beginning is more complex. In order to attribute to the child knowledge of part of speech categories what is needed is evidence of formal distinctions between words such that they are pulled together under some similarities and distinguished across some differences. I will argue that such evidence can be provided by using a *systemic and multidimensional* approach that takes into account the development of different aspects of children's language production at the same time (Veneziano, 1999).

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[1] The bias is not found in all languages, in particular, not in Korean (e.g., Gopnik & Choi, 1995).

[2] translation by the author

Studying the emergence of word categories

In this connection, this paper analyzes two aspects of French language development: the emergence of free grammatical morphemes and that of linked verbal morphology. Indeed, in French, nouns are in general preceded by determinants (at the level of „immediate syntax" Lazard, 1984, p. 31) and, in oral language, they are most often invariable. Verbs, instead, may be produced alone at the beginning of sentences (in the imperative form), or may be preceded by pronouns, auxiliaries or prepositions, and, orally, they vary in their final part due to obligatory verbal linked morphology indicating properties like person, number, time and aspect. Moreover, the words of the two categories have different distributional properties in a sentence (e.g. Tyvaert, 2002).

Given these properties, evidence of differential use of free grammatical morphemes and of linked grammatical morphemes would provide a clear index of categorial differentiation between words in the child's own system. Such evidence is relatively easy to find when the child's production is sufficiently elaborated. However, theoretically, it is crucial to determine whether categorial distinctions of this type are present early or whether the notion of word categories, based on formal distinctions of the type described above, is constructed at the same time as the child goes along in language learning.

Is it possible to look early on for indices of word categories in the child's production? Recent work on language acquisition enables us to give a positive answer to this question as well as to look for early signs of differentiation among words at a time when children are still essentially single-word speakers. Indeed, it has been noted that children, usually in the early period of acquisition, start adding to their word-like productions monosyllabic, often vocalic or nasalized, elements, in front of words that the child used earlier, and may continue to use, without such elements. For example, the sound /ə/ in /ədog/ and, for French, in /əpɛ̃/ for 'pain', 'bread'. These sounds, observed in several languages (already by Grégoire, 1937, for French-acquiring children) have been recently referred to by the term *fillers* (Peters & Menn, 1993; see Peters, 1997, for a review). Fillers have been considered, at least starting at a given moment in development, as early forms of grammatical morphemes (e.g., Bottari, Cipriani & Chilosi, 1993/1994; Dolitsky, 1983; Kilani-Schoch & Dressler, 2000; Peters & Menn, 1993; Veneziano, Sinclair & Berthoud, 1990; Veneziano & Sinclair, 2000). If different kinds of *fillers* were found in prenominal and in preverbal positions, such a differentiation would provide evidence for the onset of nouns and verbs and, at the same time, of protomorphemes (Veneziano, 2001a). Indeed, one criterial definition of grammatical morphemes in French is their differential production as a function of the grammatical category of the word they precede and/or follow.

The second aspect of children's language production that is bound to provide early evidence for a differentiation between words concerns the phonomorphologically relevant (PMR) variations distinguishing French verbs from French nouns. Indeed, PMR variations occurring for the same verb-word (for example, /'turn/ 'turn(s)', and /'tur'ne/ 'to turn, turned') and produced only for words that are verbs in the language, provide another indication of an emergent differentiation between words that are nouns and words that are verbs.

The data

The subjects

The data presented here come from two longitudinal studies of mother-child dyads living in Geneva, Switzerland[3]. In one of the dyads the child was a girl (C) and, in the other a boy (G). C was the second-born child of two children, her brother being about three years older, while G was the first and only child. The social background of the two families can be considered middle-class. The language spoken at home was French. For the girl, the observations started when she was 1;3 and ended when she was 2;2[4] (the study provides 15 and a half hours of videorecordings); for the boy they started when he was 1;4 and ended when he was 2;3 (this study provides 17 hours of videorecordings).

At the beginning of the study the children had less than ten recognizable words in their repertoire and produced exclusively single-word utterances. At the end, their production consisted in a majority of multiword utterances, and contained recognizable grammatical morphemes (articles, prepositions, auxiliaries and conjunctions).

Modalities of observations and of transcriptions

Dyads were observed at home for about one hour every two weeks, during naturally-occurring interaction. Both video and independent audiorecordings were made of the sessions. Videos were made with a shoulder-held camera allowing for following the child in his/her displacements around the room or the apartment.

The sessions included various types of free play activities (e.g., block construction, playing ball, ritual games, manipulation of objects), book reading, spontaneous symbolic play and, sometimes, snack/coffee around the kitchen table. Two observers (including the author) were present, taking turns at filming and note-taking, while sitting out of the way, generally assuming a friendly, non-intrusive attitude, but responding when solicited by the child. During the second half-hour, the observer took a more active role.

The sessions were transcribed by one of the observers and checked by at least one other person. Many tapes were again viewed several times together; disagreements were generally resolved during this phase of joint repeated listening/viewing. Transcriptions of the child's speech and of the interacting persons were made primarily from the videotapes, complemented when necessary by the independent audiorecordings. Transcription of the children's speech remained close to actual pronunciation (transcribed mainly in IPA); adult speech was transcribed in conventional French orthography. Transcripts include detailed information about non-verbal activities contributing to the understanding of what was said.

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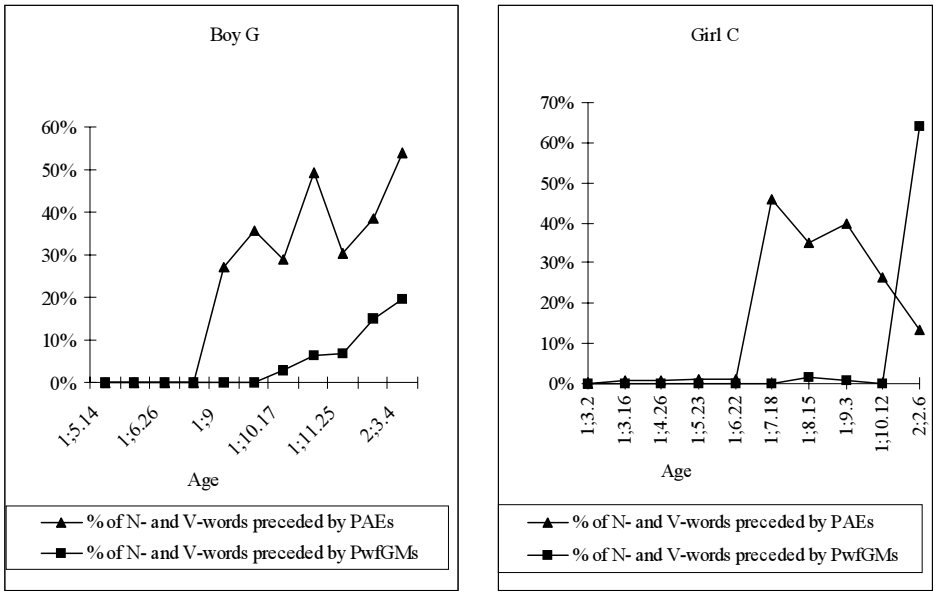
[3] We thank the FNRS, the Swiss National Foundation for Scientific Research, for support during data collection.

[4] The principal study ended when C was 1;10.12 but an additional visit was recorded four months later, at 2;2.

Figure 1. Proportion of noun-words and verb-words preceded by PAEs and by phonologically well-formed grammatical morphemes (PwfGMs)



Fillers or *Prefixed Additional Elements (*PAEs)

Fillers, more neutrally referred to here as *Prefixed Additional Elements*, in short PAEs (Veneziano, 1999, 2001b; Veneziano & Sinclair, 2000), make their appearance in the *corpora* of our two subjects in a rather sudden way, around 1;7 for the girl, and 1;9 for the boy. Figure 1 shows the proportion of noun-words and verb-words[5] preceded by PAEs. It presents also the proportion of these same words that are preceded by phonologically well-formed grammatical morphemes (for example, *le* in /lə'bɛ̃/ 'the bath', which in French corresponds to the singular masculine definite article).

At this time children start to produce sequences like /e'pik/ (*pique* 'sting(s)'), /a'gry/ (*grue,* 'crane') and /ə'ʃő/ (*bouchon*, 'cork'), where respectively the sounds /e/, /a/ and /ə/, are PAEs. Are thus considered PAEs syllabic sounds, usually vocalic or nasalized, produced in prelexical position, and that are absent from the target word (as in /a'gry/ for /'gry/*)* or are clearly different from the sound(s) of the non-reproduced parts of the target (as the /ə/ in /ə'ʃő/ for /'bu'ʃő/, where the non reproduced part is the syllable /bu/). By this definition, initial vocalic sounds /e/ and /a/ in productions like /e'be/ for /'be'be/, 'baby', /a'po/ for /ʃa'po/, 'hat' and /a'ty:r/ for /'vwa'tyr/, 'car', have

[5] Words that are nouns and verbs in the language are referred to as noun-words and verb-words, without any judgment on the status of these words in the children's language.

not been considered PAEs as they could simply be part of the word itself[6]. The corresponding productions have been classified as vowel-initial lexical items.

Is there selectivity in the production of PAEs as a function of the type of word they precede? More specifically, do children produce PAEs differently, be it in terms of quantity and/or quality, in the prelexical position of words that are nouns and verbs in the adult language?

Selectivity in the production of PAEs

Selectivity in Child-Directed Speech (CDS)

French morphosyntax clearly differentiates nouns and verbs. Do traces of this difference remain visible if only PAEs are taken into account? Earlier work has shown that this is the case in the speech the mother of C addresses to her child (Veneziano & Sinclair, 2000). In particular, we found that nouns are preceded significantly more than verbs by a grammatical morpheme (98,6 of nouns vs. 87,3% of verbs, a highly significant difference[7]). Moreover, when taking into consideration only the first most adjacent prelexical vocalic element occurring in prenominal and in preverbal positions, we found that in prenominal position there is a massive occurrence of /ə,e/ (44% of the prenominal positions) and a sizeable occurrence of /a/ (19%), whereas in the preverbal position there is a greater variety of vocalic sounds, distributed about evenly for /a/, /e,ə/, /wi,i/ /y/ and /ɛ/. The difference between the two distributions is highly significant[8]. Another difference between nouns and verbs is greater stability of the prenominal compared to the preverbal environment. Indeed, while 48% of the noun types are preceded by the same grammatical morpheme in all of their occurrences, only 27% of the verb types are preceded by the same grammatical morpheme; 34% are preceded by three or more different grammatical morphemes, compared to only 13% of the noun types. As expected, nouns are practically invariable, whereas 38% of the verbs occur in at least two different phonomorphological forms.

Thus, on the whole, in CDS, nouns are more stable in their lexical form and have a more stable and recurrent prelexical environment than verbs do.

Selectivity in children's production of PAEs

Is a similar differentiation present in children's production of PAEs?

During the first months of PAE production, neither child produces them differently before noun-words and verb-words. Between 1;7 and 1;10, for C, and between 1;9 and 2;2, for G, PAEs are produced in the same proportions in prenominal and in preverbal positions (the chi-square tests are all non-significant at these sessions). At 2;2 for the

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[6] A denasalized sound is considered as similar to the corresponding nasalized, and thus as belonging to the target word. For example, the sound /o/ in /o'be/ for /'tõ'be/, 'fallen, to fall'.

[7] The chi square value for the difference is: $c^2(2x2) = 33.52$, $p<<.001$, $df = 1$.

[8] The chi square value for the difference between the two distributions is: $c^2(10x2) = 142.11$, $p < 0.001$, $df = 9$.

Table 1. Examples of noun and verb words with PAEs, produced before and after the differentiation between the prenominal and the preverbal positions

	Prenominal position	Preverbal position
	Before differentiation	
Examples from C	/a'gry/ /'gry/ '[a]crane'	/a'pik/ /'pik/ '[a]sting(s)'
	/e'ʃõ/ /'bu'ʃõ/ '[e]cork'	/e'pot/ /'port/ '[e]carry(ies)'
	/ə'ʃjɛ̃/ /'ʃjɛ̃/ '[?]dog'	/ə'je / /'mã'je/ '[ə] (to) eat, eaten'
Examples from G	/a'buʃ/ /'buʃ/ '[a]mouth'	/a'ryl/ /'bryl/ '[a]burn(s)'
	/e'vaʃ/ /'vaʃ/ '[e]cow'	/ema'je/ /'mã'je/ '[e]to eat, eaten'
	/ə'ʃɛ̃/ /'?jɛ̃/ '[?]dog'	/əplə/ /'plə/ '[ə]cry(ies)'
	After differentiation	
Examples from C	/a'dam/ /'dam/ '[a]lady'	/a'don/ /'don/ '[a]give(s)'
	/e'za'zo/ /'wa'zo / '[e]bird(s)'	/i'gat/ /'re'gard/ '[i]look(s)'
	/o'nu/ /'je'nu/ '[o]knee'	/õ'tir/ /'tir/ '[õ]pull(s)'
Examples from G	/yn'dam/ /'dam/ '[yn]lady'	/i'ta'se/ /'ka'se/ '[i] (to) break, broken'
	/eme'zõ/ /'me'zõ/ '[e]house'	/o'ku've/ /'tru've/ '[o] (to) find, found'
	/o'pom/ /'pom/ '[o]apple'	/õ'par/ /'part/ '[õ]leave(s)'

girl, and at 2;3 for the boy, noun-words are preceded more often than verb-words by a PAE: 95,8% of noun-words vs. 65,1% of verb-words for C; 77% vs. 53% for G[9].

Concerning the kinds of PAEs that are produced in the two positions, the first signs of differentiation are observed at 1;10.12 for C, and at 2;3 for G, when the distributions of PAEs produced in prenominal and in preverbal positions show significant differences for the first time[10].

Table 1 presents examples of noun and verb words with PAEs, produced before and after the differentiation between prenominal and preverbal PAEs, for C and G separately.

Before the differentiation, PAEs produced in the two positions are predominantly /a/, /e/ et /ə/. When a differentiation starts to appear, these sounds continue to appear in the prenominal position, but one finds also elements like /o/, /n/ and /yn/. In the preverbal position, /o/ occurs significantly more than in the prenominal position, while /i/ and /ő/ are found only in preverbal position.

These data clearly show that when children start to produce PAEs, and for a certain period afterwards, they do not treat noun and verb words differently, even if they had at their disposal the means for doing it.

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[9] $c^2(2x2) = 21.23$, $p < 0.001$, $df = 1$, for C ; $c^2(2x2) = 6.06$; $p < 0.01$, $df = 1$, for G.

[10] The difference between the two distributions - given by the proportion of each type of PAE occurring in the two positions - is significant for the first time at 1;10;12 for C: $c^2(4x2) = 11.04$, $p < 0.02$, $df = 3$; and at 2;3 for G: $c^2(5x2) = 14.44$, $p < 0.01$, $df = 4$.

The emergence of phonomorphologically relevant (PMR) variations and the beginnings of linked verbal morphology

When verb words enter the child's vocabulary, different occurrences may present phonological variation (for example, /'be/ and /o'be/ for /tő'be/, 'to fall, fallen'; /'kas/ and /'kaʃ/ for /'kaʃ/, 'hide(s)'). Such variation is not morphologically relevant. From the morphological point of view, verb-words are produced for some time in only one form. This can be the infinitive/past participle form for the verb-words of the first group (ending in *-er)* as, for example, /'ka'ʃe/ for /'ka'ʃe/, 'to hide/hidden', /e'ti/ for /'sor'tir, 'sor'ti/, 'to get out / got out', and /e've/ for /ɛ̃lə've/ 'to remove/removed'. For other verb-words, the chosen form might be the present indicative, most often homophone of the imperative form as, for example, /'bwa/ for /'bwa/, 'drink(s), /'sot/ for /'sot/, 'jump(s), and /'plś/ for /'plśr/ 'cry(ies)'. Producing these different forms for different types of verb-words cannot be used as evidence that the child knows about morphological variations. The chosen form may simply be the one the child has retained to produce the corresponding lexical item. However, when the child produces phonomorphologically relevant variations for *one and the same* verb-word, it becomes more justified to consider such productions as evidence for the beginnings of verbal grammatical linked morphology.

Single-form verb morphology has been reported in several studies of early language acquisition, and for children learning different languages (see, for example, Gathercole, Sebastian & Soto, 1999; Pizzuto & Caselli, 1994; Tomasello, 1992). The studies reported here confirm these results. C produces only one PMR form per type of verb-word until 1;9, and G until 1;11. Afterwards, at least two PMR forms are found for some types of verb-words. Table 2 presents several examples for the girl and for the boy.

This phenomenon doesn't occur for noun-words nor for words belonging to other grammatical categories in the adult language.

Supplementary signs of word categorization

The systemic approach we have taken in this work leads to further information susceptible of confirming or disconfirming the hypothesis of an initial absence of categorial differentiation among the words in the child's early vocabulary.

Absence of categorial differentiation and the production of PAEs

Results of several analyses performed on C's production of PAEs strongly point to the existence of two periods. In the first period PAEs have a premorphological status, and in the second PAEs are considered protomorphological, as they start to present some characteristics of French grammatical morphemes (Veneziano, 1998; Veneziano & Sinclair, 2000).

During the first period, C seems essentially to aim at the realization of an iambic pattern in the V'CV form[11]. Similar results are found also in the data of the boy and

[11] The iambic pattern is typical of plurisyllabic French words and of monosyllabic words embedded into a proximal syntactical structure of the type 'DET+N' ('la grue') and 'PRON+V' ('il joue').

Table 2. Examples of verb words occurring in at least two different PMR in C's corpus starting 1;9.3 and in G's corpus starting1;11.15

Type of verb-word	Forms:	
	indicatif/impératif	infinitif/participe passé
	Produced by C starting 1;9.3	
habiller 'to dress'	/a'bi/	/a'je/
enlever 'to remove'	/'ɛ̃v/	/e've, ãl've/
sauter 'to jump'	/i'sot, e'sot/	/o'te/
tourner 'to turn'	/'tun/	/'tu'ne/
donner 'to give'	/'don/	/e'no'ne/
dormir 'to sleep'	/e'dor/	/'do'mi/
cacher 'to hide'	/'kaʃ/	/'ka'ʃe/
accrocher 'to hang'	/'kotʃ, e'kots/	/e'ko'tʃe/
regarder 'to look'	/'ga, i'gat/	/'ga'de/
aller 'to go'	/'va/	
	/a'lõ/	/a'le/
	Produced by G starting 1;11.15	
enlever 'to remove'	/e'lõv/	/'e've, ãl've/
mettre 'to put'	/'me/	/'mi/
brűler 'to burn'	/a'ryl, 'bryl/	/'bry'le/
cacher 'to hide'	/i'ka/	/'ka'ʃe/
chercher 'to look for'	/'ʃeʃ/	/'ʃe'ʃe/
coller 'to glue'	/'kol/	/'ko'le/
regarder 'to look'	/e'ga/	/'ega'de/
aller 'to go'	/'va/, /'vɛ/	/a'le/
donner 'to give'	/'don/	/'do'ne/
ouvrir 'to open'	/'uvr/	/'uvr'ir/
tomber 'to fall'	/e'tõb/	/'to'be/

have been reported for the production of a French-acquiring girl by Kilani-Schoch & Dressler (2000). The production of PAEs during this period obtains this pattern in words that are monosyllabic in the language (e.g., /'gry/, 'crane', changes from CV to V'CV in /a'gry/). Adult language plurisyllabic words are also produced in a V'CV iambic pattern by the child. This is however most often obtained through a different procedure, namely, by leaving aside the initial consonant of 'CV'CV(C) words (e.g., /'ʃa'po/, 'hat', is rendered at this time as /a'po/, while before the appearance of PAEs it was produced as /'pa'po/).

In support of this initial phonoprosodic hypothesis we find that in the first period (between 1;8 and 1;11), PAEs are produced significantly more frequently in C's renditions of monosyllabic than in that of plurisyllabic targets (PAEs are the only way to obtain a V'CV pattern in monosyllabic target words), while iambic V'CV renditions of plurisyllabic targets have either a PAE followed by a CV syllable (for example /ə'jaf/

for /ʒi'raf/, ‘girafe’) or, more often, nonadditional, word internal, vowels in initial position (for example, /a'ʃe/ for /'ka'ʃe/, ‘to hide, hidden’) (for more details, see Veneziano & Sinclair, 2000). The same analysis performed on the data of the boy G has given the same result for the period between 1;9 and 2;1.

The premorphological interpretation of early PAEs is supported also by the good fit existing between the proportional occurrence of the different types of PAEs produced by the child, and that of the vocalic sounds belonging to the grammatical morphemes occurring in the position most adjacent to nouns, produced by the mother in her CDS. This good correspondence doesn’t seem to have its source in the child trying to reproduce the grammatical morphemes expected in the corresponding positions. Indeed, considering PAEs as approximations of grammatical morphemes, and retaining the set of grammatical morphemes allowed by the produced PAEs, errors in grammatical morpheme production turn out to be rather high (higher than 60%, see Veneziano & Sinclair, 2000, for details). Another interpretation for the good correspondence sees it as a result of the estimate of the proportional occurrence of the different types of vocalic sounds expected, something very young children appear to be very good at.

The beginnings of differentiation between word categories and the emergence of grammaticalization in the children’s verbal production

PAEs and grammatical morphemes

The initial differentiation between word categories, supported by the selective production of PAEs and by the appearance of PMR variations only on verb-words, co-occurs with other signs of grammaticalization in the children’s production.

Some of the PAEs appear as phonologically well-formed grammatical morphemes that could occur in the positions where PAEs are produced. That is the case, for example, of /lə'bã/, ‘the bathtub’, and of /la'paʒ/, ‘the page’. At 1;10.12, 27% of the prenominal PAEs produced by C are of this kind, while only an average of 4.9% of the PAEs produced at earlier sessions were. At 2;2, this proportion goes up to 86% (see also Fig. 1).

For the boy, at 2;2 and 2;3, respectively 28% and 27% of the PAEs correspond to phonologically well-formed grammatical morphemes, while at the previous sessions the average was only 5.9%.

It should also be noted that at this time plurisyllabic targets are seldom reproduced with a word-internal vowel in word-initial position. At 1;10.12, only 11% of the plurisyllabic targets are reproduced in this way (vs. 55% found at the earlier session). These words are now reproduced in a ‘CV’CV(C) pattern and may have PAEs in initial position as well (for example, /'epapj'e/ for /'papj'e/, ‘paper’.

Concerning the grammatical function of PAEs, we find an interesting progression for C. At 1;10.12, although errors of omission[12] are still very high (69% of the prenominal and 33% of the preverbal positions), the kinds of PAEs produced approxi-

[12] An error of omission is counted when neither a PAE nor a phonologically well-formed grammatical morpheme is found in those prenominal and preverbal positions where such an absence would not be adequate under any possible interpretation of the child’s utterance.

mate the grammatical morphemes one would expect to find in the positions (for example, /a'tɛt/, for /la'tɛt/, 'the head'). This is particularly the case for the prenominal positions, where 82% of the PAEs are approximations of expected morphemes; it is somewhat less so for the preverbal position, where the corresponding figure is 49%. This finding contrasts with that found at the previous sessions when, as mentioned above, these kinds of errors would have been high if PAEs were considered to be approximations of grammatical morphemes.

At 2;2, errors of omissions are almost non-existent in prenominal position (only 3%) and they are greatly reduced in preverbal position (18%). At this age, 94% of the PAEs produced in prenominal position are either approximations or well-formed reproductions of grammatical morphemes that could be found there. The corresponding figure for the preverbal positions is 70%, not as high as for the prenominal position, but considerably higher than that found at the previous sessions.

Articulated speech

The beginnings of differentiation between words in terms of grammatical categories correspond to a change in multiword speech. At 1;10, C's utterances are dominantly multiword, and represent 72% of all the communicative intentions identified. This constitutes a great change relative to the previous session, recorded one month earlier, where less than 37% of C's communicative intentions were expressed by multiword utterances. At 2;2 this percentage grows somewhat further and it represents 82% of the communicative acts produced by C (see Veneziano, 1999, for an extended analysis of the relation between combinatorial speech and measures of the grammaticalization of the child's production).

Conclusions

Results presented above strongly suggest that there is a first period where the two children do not differentiate words into formal categories. Noun-words and verb-words that are part of the children's vocabulary from the very early sessions of the study do not seem to differentiate in other ways than by their meaning. They do not fall into distinct classes of words having different privileges or constraints of occurrence. For several months, words seem to constitute one formally undifferentiated set[13]. It is a pre-categorial, and pre-morphological period (see also Kilani-Schoch & Dressler, 2000, on this point), characterized by a non-grammatically-motivated organization of the phonoprosodic regularities of the language (see Veneziano & Sinclair, 2000, for more details on this latter hypothesis).

The difference between noun-words and verb-words appears to come about progressively, and manifests itself in different ways and at different levels.

It is found at the level of PAE production, where PAEs are produced differentially for words that are nouns and for words that are verbs in the language.

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[13] This position rejoins that of authors working in the history of languages (see, for example, Tyvaert, 2002).

It is seen at the level of the PMR variations which, when they appear, affect only verb-words.

It manifests itself also in a better phonological reproduction of free and linked grammatical morphemes and, what is more important, in a more adequate use of PAEs and of phonologically well-formed grammatical morphemes. They are used increasingly more in places where they are needed from a grammatical viewpoint, and the choice of the grammatical morpheme or of its phonological approximation corresponds increasingly to the form of the morpheme expected.

Finally, in a more indirect way, multiword speech becomes the dominant way of expression. The hypothesis here is that the organization of words into formal classes facilitates rule-based, and thus more systematic, combination of words, both within and across constituents.

The differentiation of words into classes is a construction spreading over a relatively long period, and starts to be elaborated in close relationship to progress in other aspects of language, in particular, in free and linked verbal grammatical morphology, and in word combination.

In French, the salient distinction between the PMR variations allowed by nouns, and by verbs, can be hypothesized to be highly relevant to the formal distinction between nouns and verbs. However, the objective existence of such a salient distinction is not sufficient by itself. It needs to acquire some meaning for the children to notice and integrate it in their production. One of the ways it can acquire meaning is by contributing to a better organization of other fragments of the child's emerging system, such as the combination of words across constituents, as well as within constituents, where PAEs start to look like grammatical morphemes. Parts of grammar acquire grammatical meaning when they can be coordinated within a system where other parts of grammar have started to blossom, in principle each for independent reasons.

References

Bassano, D. (1998). L'élaboration du lexique précoce chez l'enfant français : structure et variabilité. *Enfance, 4*, 123-153.

Bates, E., Bretherton, I. & Snyder, L. (1988). *From first word to grammar: Individual differences and dissociable mechanisms*. New York: Cambridge University Press.

Bottari P., Cipriani P. & Chilosi A.M. (1993/1994). Protosyntactic devices in the acquisition of Italian free morphology. *Language Acquisition: A Journal of Developmental Linguistics*, *3*, 327-369.

Clairis, C. (1984). Nom et verbe. *Modčles Linguistiques*, Tome VI, Fascicule 1, 23-28.

Dolitsky, M. (1983). The birth of grammatical morphemes. *Journal of Psycholinguistic Research*, *12*, 353-360.

Gathercole, V.C.M., Sebastian, E. & Soto, P. (1999). The early acquisition of Spanish verbal morphology: Across-the-board or piecemeal knowledge? *International Journal of Bilingualism, 3*, 133-182.

Gentner, D. (1982). Why nouns are learned before before verbs: Linguistic relativity versus natural partitioning. In S. Kuczaj (Ed.), *Language development: Vol. 2. Language, thought and culture* (pp. 301-334). Hillsdale, NJ: Lawrence Erlbaum Associates.

Gopnik, A. & Choi, S. (1995). Names, relational words, and cognitive development in English and Korean speakers: Nouns are not always learned before verbs. In M. Tomasello & W. E. Merriman (Eds.), *Beyond the names for things* (pp.63-80). Hillsdale, N.J.: Lawrence Erlbaum Ass.

Grégoire, A. (1937). *L'apprentissage du langage. Vol.1*. Ličge: Bibliothčque de la Faculté de Philosophie et Lettres.

Kilani-Schoch M. & Dressler W.U, (2000). Are fillers as precursors of morphemes relevant for morphological theory? In W.U. Dressler, O.E. Pfeiffer, M. Pöchtrager & J. Rennison (Eds), *Morphological Analysis in Comparison. Current issues in Linguistic Theory,* Vol. 201 (pp. 89-111). Amsterdam: John Benjamins Co.

Lazard, G. (1984). La distinction entre nom et verbe en morphologie et en syntaxe. *Modčles Linguistiques*, Tome VI, Fascicule 1, 29-40.

Macnamara, J. (1986). Border dispute: The place for logic in psychology. Cambridge, Mass: MIT Press.

Maratsos, M. & Deak, G. (1995). Hedgehogs, foxes, and the acquisition of verb meaning. In M. Tomasello & W. E. Merriman (Eds.), *Beyond the names for things* (pp.377-404). Hillsdale, N.J.: Lawrence Erlbaum Ass.

Peters, A. M. (1997). Language typology, prosody and the acquisition of grammatical morphemes. In D. I. Slobin (Ed.), *The Crosslinguistic Study of Language Acquisition,* Vol. 5. Hillsdale NJ, L.Erlbaum.

Peters A.M. & Menn L. (1993). False starts and filler-syllables: Ways to learn grammatical morphemes. *Language, 69*, 742-777.

Pizzuto, E. & Caselli, M. C. (1992). The acquisition of Italian morphology: implications for models of language development. *Journal of Child Language, 19*, 491-557.

Surugue, N. (Ed.) (1984*). L'opposition verbo-nominale dans diverses langues du monde, Modčles Linguistiques,* Tome VI, Fascicule 1. Presses Universitaires de Lille.

Tomasello, M. (1992). *First verbs: A case study of early grammatical development*- Cambridge, UK.: Cambridge University Press.

Tyvaert J-E. (2002). L'invention des parties du discours. In Dupuy-Engelhardt, H. & Montibus, M.-J. (sous la direction de), *Parties du discours: Sémantique, Perception, Cognition - Le domaine de l'audible.* Collection Recherches en linguistique et psychologie cognitive, no. 17. Publications du Centre Interdisciplinaire de Recherches en Linguistique et Psychologie cognitive, EA 2071.

Veneziano, E. (1998). Emergence de la morphologie grammaticale chez l'enfant : une continuité discontinue. *Verbum,* XX(1), 87-109.

Veneziano, E.. (1999). Early lexical, morphological and syntactic development in French: Some complex relations. *Journal of Bilingualism, 3* (2), 183-217.

Veneziano E. (2001a). A System-Approach to the Analysis of "Fillers" at the Transition to Grammar. In Almgrem, M., Barreqa, A., Ezeizabarrena, M.-J., Idiazabal, I. & MacWhinney, B. (Eds), *Research on child language acquisition* (739-760). Sommerville, Mass.: Cascadilla Press.

Veneziano E. (2001b). The importance of studying filler-producing children. *Journal of Child Language, 28*, 275-278.

Veneziano E. & Sinclair H. (2000). The changing status of 'filler syllables' on the way to grammatical morphemes. *Journal of Child Language, 27*, 461-500.

Veneziano, E., Sinclair, H. & Berthoud, I. (1990). From one word to two words: repetition patterns on the way to structured speech. *Journal of Child Language*, *17*, 633-650.